

PATENT CLAIMS

1. Polymer mixture which comprises the following components:

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a) a low-molecular-weight (meth)acrylate
(co)polymer

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characterized by a solution viscosity in
chloroform at 25°C (ISO 1628 - Part 6) smaller
than or equal to 55 ml/g

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b) an impact modifier based on crosslinked
poly(meth)acrylates

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c) a relatively high-molecular-weight (meth)-
acrylate (co)polymer,

characterized by a solution viscosity in
chloroform at 25°C (ISO 1628 - Part 6) greater
than or equal to 65 ml/g and/or

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d) a (meth)acrylate (co)polymer other than a)
characterized by a solution viscosity in
chloroform at 25°C (ISO 1628 - Part 6) of from 50
to 55 ml/g

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where each of the individual components a), b), c)
and/or d) may be individual polymers or else a
mixture of polymers,

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where the entirety of a), b), c) and/or d) is 100%
by weight,

and where the polymer mixture may also comprise
conventional additives, auxiliaries and/or fillers
and

where a test specimen produced from the polymer mixture simultaneously has the following properties:

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I. a tensile modulus (ISO 527) of at least 2600 MPa,

II. a Vicat softening point VSP (ISO 306-B50) of at least 109°C,

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III. an impact strength (ISO 179-2D, flatwise) of at least 17 kJ/m², and

IV. a melt index MVR (ISO 1133, 230°C/3.8 kg) of at least 1.5 cm³/10 min.

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2. Polymer mixture according to Claim 1, characterized in that the components are present in the following quantitative proportions, their entirety being 100% by weight:

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a) from 25 to 75% by weight

b) from 10 to 60% by weight

c) and/or d) from 10 to 50% by weight.

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3. Polymer mixture according to Claim 1 or 2, characterized in that component a) is a copolymer of methyl methacrylate, styrene and maleic anhydride.

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4. Polymer mixture according to Claim 3, characterized in that component a) is a copolymer of

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from 50 to 90% by weight of methyl methacrylate,
from 10 to 20% by weight of styrene and
from 5 to 15% by weight of maleic anhydride.

5. Polymer mixture according to one or more of Claims 1 to 4, characterized in that component b) has a two- or three-shell structure.
- 5 6. Polymer mixture according to one or more of Claims 1 to 5, characterized in that component c) is a copolymer of methyl methacrylate, styrene and maleic anhydride.
- 10 7. Polymer mixture according to Claim 6, characterized in that component c) is a copolymer of
from 50 to 90% by weight of methyl methacrylate,
15 from 10 to 20% by weight of styrene and
from 5 to 15% by weight of maleic anhydride.
8. Polymer mixture according to one or more of Claims 1 to 7, characterized in that component d) is a
20 homopolymer or copolymer of at least 80% by weight of methyl methacrylate and, where appropriate, up to 20% by weight of other monomers copolymerizable with methyl methacrylate.
- 25 9. Polymer mixture according to Claim 8, characterized in that component d) is a copolymer of from 95 to 99.5% by weight of methyl methacrylate and from 0.5 to 5% by weight of methyl acrylate.
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10. Polymer mixture according to one or more of Claims 1 to 9, characterized in that a lubricant is present as auxiliary.
- 35 11. Polymer mixture according to Claim 10, characterized in that stearyl alcohol is present as mould-release agent.

12. Injection moulding, composed of a polymer mixture according to one or more of Claims 1 to 11.
- 5 13. Use of a polymer mixture according to one or more of Claims 1 to 11 for producing injection mouldings which have the following properties:
 - I. a tensile modulus (ISO 527) of at least 2600 MPa,
 - 10 II. a Vicat softening point VSP (ISO 306-B50) of at least 109°C,
 - III. an impact strength (ISO 179-2D, flatwise) of at least 17 kJ/m², and
 - 15 IV. a melt index MVR (ISO 1133, 230°C/3.8 kg) of at least 1.5 cm³/10 min.
- 20 14. Use of the injection mouldings according to Claim 12 or 13 as parts of household devices, of communication devices, of devices for hobbies or for sports, or bodywork parts or parts of bodywork parts in the construction of automobiles, of ships or of aircraft.